

IN THE ABSTRACT

Please delete the abstract in its entirety and substitute a new abstract as follows:

--A method for manufacturing a diffusion grating-based optical identification element is provided. The optical identification element includes a known fiber substrate, having a diffraction grating disposed therein the grating being indicative of a code when exposed to incident light. A large number of elements or microbeads all having the same identification codes can be manufactured by cutting the substrate transversely where the grating is located, thereby creating a plurality of elements, at least two of the elements having the grating therein along substantially the entire length of the elements. The elements may be manufactured in many different ways, including winding the fiber onto a basket, forming the gratings in the basket openings or bays, removing the fiber and cutting the fiber to form the elements 8. Each bay may have a set of elements with a unique set of codes therein.--